

## **REMARKS**

Claims 15-53 are pending in the application. The examiner had indicated the allowability of claims 16, 18-19, 46, and 48-49. The examiner had also objected to claims 26, 28-29, 36 and 38, as being dependant upon a rejected base claim, but were noted to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants thank the examiner for this indication of allowable subject matter.

Applicants have amended claims 15, 17-25, 34-35, 45, 47, 49-50, and 51-52. As discussed further in more detail below, applicants believe that the amendments overcome the rejections based on the art of record. Further amendments have been made to claims 15, 24, and 34 to further clarify the invention. Support for the amendments may be found in the original claim set as well as in the specification at Figure 9. No new matter has been added. Applicants respectfully submit that the amendments and arguments overcome the rejections based on the art of record.

The examiner had objected to the drawings. Applicants have submitted proposed corrected drawings (incorporating Figures 6A, 6B, 7A, and 7B). Applicants respectfully request that the objections be withdrawn.

### **Claim Rejections Under 35 U.S.C. §103**

Claims 15, 17, 20-25, 27, 30-35, 37, 39-45, 47, 50-53 were rejected. Claims 15 and 20 were rejected under *35 U.S.C. §103* as being unpatentable over applicant's admitted prior art (page 2, line 23; Figure 8) in view of Massie et al. (U.S. Patent 5,943,427). Further, the examiner rejected claims 17 and 47 under *35 U.S.C. §103* as being unpatentable over applicant's admitted prior art, in view of Massie et al., in further view of Raydon, et al (U.S. 3,969,588). The examiner rejected claims 21 under 35 USC 103(a) as being unpatentable over applicant's admitted prior art, in view of Massie et al., in further view of Abel, et al (U.S. 6,009,178). Claims 22 and 23 were rejected under 35 USC 103(a) as being unpatentable over applicant's admitted prior art, in view of Massie et al., in further view of Sibbald, et al (U.S. 5,666,425). For at least the reasons set forth

below, applicants submit that the amendments overcome the rejections based on the art of record.

Claim 15 has been amended to include a limitation that the magnitudes of the right channel and left channel are chosen, each based on a distance from the sound source to the respective one of the right and left ears respectively of the listener. This limitation is not taught or suggested in the art of record. In specific, the Examiner noted on page 3 of the Office Action that Massie teaches a distance processing unit (410) that adjusts gain in tandem to provide a distance cue and separately to provide an interaural level difference cue under control of ILD processing unit (412). At the locations cited however, neither Massie nor any other of the references teach or suggest this limitation. Instead, Massie discusses in general an ITD processing unit 404 that determines, from the emitter elevation and azimuth, an ITD value that simulates the difference in time delay perceived between each ear. Also a distance processing unit 410 calculates the frequency independent attenuation that would simulate the distance between the emitter and the receiver. There is no teaching that this attenuation is determined separately for each ear based on separate distance parameters, i.e., the distance between the sound source and the respective one of the left and right ears of the listener as required in the invention recited in claim 15. As discussed in the specification, this makes a difference for the near field effect, since close proximity sources show higher or lower gain increases for one ear than do similar far sources (of similar azimuth) for equal angular movement. Raydon and Abel have been cited respectively by the examiner for teachings relating to lookup table and crosstalk cancellation limitations. None of them teach or suggest the specific distance calculations for determining magnitude as discussed above. Thus, for at least this reason, claim 15 is submitted to be allowable over the art of record.

Claims 17 has been amended to indicate that the lookup table distance values correspond to distances between the source position and each of the respective ears of the listener. For the same reasons as discussed above with respect to claim 15, applicants submit that none of the art of record teaches or suggests using the specific distance to one of the respective ears. Thus, applicants submit that claim 17 is in allowable form.

Independent claims 23-24, 34, 45, 47, and 50-52 contain a distance limitation similar to that presented in either claim 15 or claim 17. Thus, for at least the same

reasons as discussed relating to claims 15 and 17, applicants submit that these claims are in allowable form. That is, none of the art of record specifically teaches or suggests using these distances to modify the respective magnitudes.

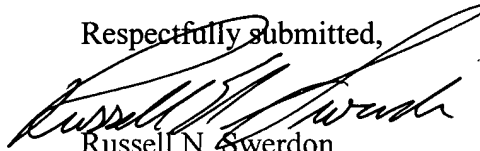
Claims 18-22, 25-33, 35-43, 48-49, and 52-53 are dependant claims and are submitted to be allowable for at least their dependencies from an allowable claim. Moreover, the dependent claims recite additional limitations, and are therefore allowable for these reasons as well. Further discussion of these distinctions is believed unnecessary in light of the distinctions discussed above relative to the independent claims.

The arguments presented in the remarks section of this amendment are believed to provide an adequate response for asserting the allowability of all of the presently pending claims in this present application. To the extent that the applicant has not addressed some issues raised by the Examiner in the Office Action, applicant believes that such unaddressed issues do not require a response at the present time since allowability of the claims has been asserted by the applicant based upon other grounds. However, applicant's lack of response to any of the issues raised by the Examiner does not constitute an admission by the applicant as to the accuracy of the Examiner's assertions with respect to such issues. Applicant specifically reserves the right to respond to such issues at a later time during the prosecution of the present application, should such a need arise.

### **Conclusion**

Accordingly, it is submitted that all issues in the Office Action have been addressed, and withdrawal of the rejections is respectfully requested. Applicants believe that this application is in condition for allowance, and respectfully request a prompt passage to issuance. If the Examiner believes that a telephone conference would expedite the prosecution of this application, he is invited to contact the Applicants' undersigned attorney at the telephone number set out below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Russell N. Swerdon", written over the typed name.

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